



# Residential Solar Panel Systems

## Residential Solar Panel (PV) Requirements

*By checking each requirement, you are stating that you have supplied correct and complete information. In the event that the required information is not contained in the submitted documents, you will be notified of the deficiency. Failure to supply the additional requested information within five (5) working days after notification may result in your application being delayed and eventually discarded. A new application, the original application, complete plans and a new checklist will be required for re-submittal for plan review. This re-submittal will be treated as a new application and will be processed in the order of receipt. Complete the information sheet attached.*

### **General Information**

A permit is required for the installation of Solar Panel (PV) systems, which must comply with the requirements of the National Electrical Code and International Residential Code. Please see the Solar Panel/Photovoltaic (PV) system installation handout notes for material and installation requirements.

This work must be performed by a licensed Electrical Contractor registered as such with the City of Aurora.

### **Plan Review**

Submit site plan (a survey plat is required) showing the proposed location of the solar panels with respect to the property lines, easements and house. Please see the Solar Panel - PV Check List for additional details related to Plan Review submittal requirements.

### **Drawing Package Contents**

- ☐ When equipment is installed on an existing structure, include a letter from a structural engineer indicating that the existing structure is sufficient to support the new loads associated with the additional weight and wind resistance.
- ☐ Structural plans designed and sealed by a Texas Professional Engineer for securing the panels to the existing structure, or to a new foundation or structure shall be submitted.
- ☐ Electrical solar panel work shall comply with NEC Article 690, and the panels shall comply with UL Standard 1703.
- ☐ Provide complete electrical plans prepared by a Professional Engineer or a Licensed Master Electrician.

☐ At minimum, the following shall be indicated on the plans (including a site or roof plan) to be confirmed during inspection:

- |   |  |   |
|---|--|---|
| <input type="checkbox"/> Panel Layout                 | <input type="checkbox"/> Roof Penetrations         | <input type="checkbox"/> Charge Controllers |
| <input type="checkbox"/> Panel Access Pathway Layout  | <input type="checkbox"/> Disconnect Size & Type    | <input type="checkbox"/> Grounding Points   |
| <input type="checkbox"/> Mounting Structure & Anchors | <input type="checkbox"/> Conductor Insulation Type | <input type="checkbox"/> One-Line Diagram   |
| <input type="checkbox"/> Over Current Protection      | <input type="checkbox"/> Conductor Size & Type     |   |
| <input type="checkbox"/> Inverter Size & Type         | <input type="checkbox"/> Battery(ies) Size & Type  |   |

### **Inspections**

Inspections will be required prior to and upon completion of work. A permit must be obtained prior to construction and must remain posted at the work site until the approved Rough Electric, Framing, Final Electric, and Final Inspection have been completed and the project is considered complete. The contractor shall request inspections through our online inspection request portal.

### **Fees and Applications**

A permit fee of \$200 is required, and an application must be completed and submitted to Building Inspections.

### **Additional Information**

This handout is for informational purposes only and should not be relied on in place of official regulations and/or policies. The City of Aurora makes no representations, guarantees, or warranties as to the accuracy, completeness, currency, or suitability of the information provided via the handout. Customers and citizens are personally responsible for complying with all local, state and federal laws pertaining to projects within the city. Copies of the City of Aurora adopted codes and Zoning Ordinances.



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## SOLAR PANEL/PHOTOVOLTAIC (PV) SYSTEM INSTALLATION HANDOUT NOTES 2014 NATIONAL ELECTRICAL CODE

1. Contact Building Inspections prior to beginning Construction.
2. A rough electric inspection shall be performed prior to installing panels on roofs.
3. Provide an independent PV disconnect ahead of the inverter.
4. Equipment grounding conductors used for grounding arrays smaller than is #6 AWG. Copper shall be installed in a suitable raceway. All exposed equipment grounding and bonding conductors shall be solid copper or UV rated.
5. Devices (lugs) used for grounding arrays shall be suitable for use in wet locations (tin plated copper) and attachment hardware shall be stainless steel with star washers.
6. Provide all appropriate warning labels at disconnects and equipment.
7. Plastic UV rated cable ties shall not be used to secure exposed wiring between modules. Approved clips, stainless steel cable ties, or stainless-steel pipe clamps with rubber inserts are acceptable.
8. Conductors and conduits run on rooftops may require additional ambient temperature adjustments per table 310.15(B)(3)(c).
9. Residential interior PV direct current system conductors shall be identified by system to comply with NEC 2011 section 690.4 (B). Direct Current ungrounded conductors shall be Orange or Yellow. The grounded conductor shall be identified by the color Gray.
10. PV source and output circuits run inside the building shall not be installed within 10" of the roof decking unless installed directly below the roof surface covered by PV modules and associated equipment. 690.31(E)(1)
11. Metal junction boxes, raceways, or other wiring methods supplying dc circuit wiring shall be labeled designating "Photovoltaic Power Source". 690.31. (E)(3) &(4)

***Note: The 2014 NEC has many significant changes to article 690 and 705. Installers should carefully review those sections prior to installing photovoltaic systems. This is not an all-inclusive list and should only be used as a guideline for reference only.***



# Residential Solar Panel Systems

## Solar Panel - PV Check List

Please fill out the Solar Panel Self-Checklist and please sign below that all information is correct. Your self-checklist must be submitted along with your Solar Panel plans and application.

Please Check One: ☐ Residential Application ☐ Commercial Application

☐ Copy of inverter manufacturer information sheets

☐ Copy of module manufacturer information sheets

☐ Copy of rail/racking system manufacturer information sheets and method of attachment.

Type of roof covering? ☐ Asphalt ☐ Other \_\_\_\_\_

☐ Number of roofing layers installed \_\_\_\_\_

Type of roof framing ☐ Truss ☐ Stick: size of rafters and spacing \_\_\_\_\_ u

Does the proposed equipment installation cause the roof load assembly to exceed the maximum requirement of 10 psf per the IRC? ☐ Yes ☐ No

☐ How many modules will be installed? \_\_\_\_\_

Where will modules be installed? ☐ Roof ☐ Accessory Structure ☐ Lawn

☐ Site plan showing system installed on property. Site plan must include the following: modules, inverter(s), combiner boxes, all ac & dc disconnects, utility disconnect and meter(s), service panelboard

☐ Copy of one-line or three-line diagrams

Connection to utility grid ☐ Supply Side Connection ☐ Load Side Connection

Panelboard ampere rating: \_\_\_\_\_ amps

☐ Main breaker \_\_\_\_\_ amps

☐ Back feed Breaker \_\_\_\_\_ amps

System configuration   ☐ Positive ground   ☐ Negative ground   ☐ Ungrounded

Are battery's being installed?   ☐ Yes   ☐ No

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Contact Name: \_\_\_\_\_ Phone: \_\_\_\_\_



# Residential Solar Panel Systems

## SOLAR PANEL ELECTRICAL PERMIT APPLICATION

### Project Information

Project Address	
Legal Description	
<b>Property Owner Information</b>	
Owner(s) Name(s)	
Phone Number	
Email Address	
<b>Solar Contractor Information</b>	
Contractor Name	
Company	
Address	
Phone	
Email	

### PERMIT INFORMATION

☐ New Residential      ☐ New Commercial      ☐ Adding to Existing Structure

Number of Panels \_\_\_\_\_ Total KW: \_\_\_\_\_

<b>Detailed Description of Project/Work Being Performed</b>

\*\*Continue on back if necessary and/or provide attachments